

REMARKS/ARGUMENTS

In the Office Action of December 2, 2003, examined claims 11-22 were rejected under 35 U.S.C. §102(e) on U.S. Patent 5,931,160 to Gilmore et al.

By the present amendment the claims have been revised as claims 23 through 35 to provide a clearer recitation of the construction and features of the present invention and to meet the point made by the Examiner in Paragraph 1 of the Office Action.

The present invention is directed to an arrangement suitable for use in medical apparatus. The arrangement allows the proper functioning of a measuring device to be determined during operation of the apparatus so that appropriate safety steps can be taken, if necessary. Fig. 3 of the application shows the invention as applied to an anesthesia machine in which the measuring device is a gas monitor (7). It will be appreciated that improper functioning of the gas monitor may result in the patient receiving an incorrect dosage of anesthetic agent.

In the feedback controlled operation of the anesthesia machine to supply anesthetic agent to a patient, a breathing gas feedback sample (8) is provided through a valve (15a) to the gas monitor. The output signal (18) of the gas monitor is applied with an input signal from a user interface (12) to a regulator (20) and the resulting error signal used to drive the operation of a gas dispenser (10) to control the supply of anesthetic agent to the patient.

To determine that the operation of the gas monitor (7) is proper, valve (15a) is switched to provide a sample (16) of the output gas of the gas dispenser (10) to the gas monitor. When supplied with such a sample, if the gas monitor is operating properly, the output signal (18) of the gas monitor should be a correct indication of the properties of the output gas. The gas monitor output signal (18), along with a reference signal (17) taken directly from the gas dispenser and indicative of the properties of the output of the dispenser, are provided to regulator (20). A comparator in the regulator compares the two signals (17, 18), which if the gas monitor (7) is operating properly should be the same. If they are not, it

is an indication of a fault in the gas monitor (7) and appropriate action, such as terminating control of the gas dispenser or sounding an alarm, is carried out.

As noted in the application specification at page 5, lines 20-26 the reference signal need not be a signal from the anesthesia machine but can, for example, be taken from indoor air, the gas properties of which are known, or even from other types of signal sources.

The applied Gilmore et al. reference is directed to a ventilator control system and method which, as shown in Fig. 10, allows a clinician to create and apply various types of therapy using a hierarchy of therapy controls, mode controls, breath controls, phase controls and cycle controls. See also Col. 15, line 29 of the patent. With respect to the hierarchical architecture, see Col. 16, lines 12-57.

The portions of the Gilmore et al. reference relating to the operation of the ventilator control system identified by the Examiner in the Office Action, i.e. Col. 10, lines 10-32, describe only a simple control system having a single feedback signal of inhaled volume that is compared to a trigger volume and used to provide an assisted phase of breath to the patient.

There is no teaching or suggestion in the Gilmore et al. reference of an arrangement by which the proper functioning of a gas monitor may be determined.

The Gilmore reference thus does not show the specific construction now set out in claims 23 et seq., that include a first (8) and second (16) sample means, a reference value means (17), and a comparator (20). With these elements, the operative condition of a measuring means, such as gas monitor (7) can be determined using the reference signal from the reference value means (17) and the signal from the measuring means produced by the sample from the second sample means (16). The subject matter of claims 23, and the claims dependent on claim 23, is thus neither anticipated nor rendered obvious by the disclosure of the Gilmore et al. reference and the claims are deemed allowable.

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Withdrawal of the rejection and passage of the application to allowance is respectfully requested.

Respectfully submitted,

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